panese larch stands resulted in large differences in the rate of germination of the stands, which was proved by the calculated regression means and regression coefficient. It was impossible to find correlations between altitudes of the seed stands, the average mean annual precipitations and temperatures. It is assumed that the differences which were found arose from genetic and environmental components but the trials described do not permit a statement of their proportions to be made.

Résumé

Titre de l'article: *Allure de la germination dans un test de provenance de Larix leptolepis (Sieb. et Zucc.)* Gord.

Les graines de 22 peuplements autochtones de Mélèze du Japon ont ete mises en germination; on a pu mettre en évidence des différences considerables dans la vitesse de germination par le calcul des moyennes et des coefficients de regression. I1 n'a pas été possible d'établir des corrélations entre l'altitude des peuplements porte-graines, les précipitations et températures moyennes annuelles. On estime que ces differences sont liées a des facteurs génétiques et ecologiques, mais cette expérience n'a pas permis d'evaluer leurs valeurs relatives.

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A Forest-Genetics Literature Classification Based on the Oxford Decimal Classification (ODC)

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ROHMEDER (1959) has proposed a subject-matter classification for forest genetics and forest tree breeding. It is the purpose of this paper to answer ROHMEDER's invitation for discussion on the need for revising the genetics and breeding section of the Oxford Decimal Classification (FAO/IUFRO Committee on Bibliography, 1954) and to propose expansion of the system.

I do not favor a complete revision as suggested by ROHMEDER. Minor revisions and considerable expansion are in order, but if the system approved by the FAO/IUFRO is adhered to closely, it can be used in conjunction with *Forestry Abstracts* and the Centralized Title Service abstract cards. In turn, the ODC is committed to further subdivision in parallel with the Universal Decimal Classification (Imperial Agricultural Bureaux, 1931). This subdivision should give it status for plant breeding in general. Not many breeding projects have such scope as that of forest trees with its many species, world-wide distribution, and variety of propagation methods. The modification proposed here may therefore be of utility to both forest tree and other crop breeders.

ROHMEDER'S main contention is that the biological foundations of breeding should be separated from procedures and methods. Thus, there is one category, *Mutations,* under *Genetic Foundations; Mutation Breeding,* however, is much further along in the scheme under *Breeding Methods.* While the separation proposed by ROHMEDER is not regularly used in the scheme suggested in this article, it can be incorporated, where the bulk of the material requires, by subdivision of a single category, e. g.

165.62 x 71 Progeny, varietal, and clone testing results
165.62 x 72 Progeny, varietal, and clone testing procedures; plot technique

Subdivision of a single category permits logical expansion under the Oxford System, which, incidentally, is similar in certain respects to that given by PAULEY (1958). It does not seem necessary to remove such subjects as *Seed Orchards* from their ODC designation under *Silviculture* merely because at present they are a chief concern of the geneticist.

Another of ROHMEDER'S changes is to use consecutive numbers. While this at first glance appears logical and desirable, the disadvantages seem to outweigh the aesthetic value. Classification is as efficient with one set of numbers as another.

The scheme embodied in *Table* 1 has been satisfactory for filing approximately 2,500 reprints in the genetics section of the Southern Institute of Forest Genetics. In addition to genetical subjects, climatology, geology, and phenology are included as they pertain to tree races and trials of non-native species. On the other hand, the closely related subjects of physiology, silviculture, pathology, and entomology are dealt with by other sections of the Institute staff and are not presently included, although the ODC makes provision for them. Likewise, subjects of general utility such as bibliographies, directories, glossaries, general statistics, photography, and general morphology are filed separately at present.

Although certain insertions, omissions, and a few other types of changes have been made, coding conventions of the ODC have been followed: e. g. new numbers for new categories, x's placed before innovated subdivisions, the digit .9 reserved for miscellaneous topics, the digit .0 for general subjects, and digits such as .6/8 to mean .6, .7, and .8. In addition to the infinite expansion inherent in the ODC's digit .9, room for insertions has been left between most of the categories by using every other number — 1, 3, 5 instead of 1, 2, 3.

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Table 1. — LITERATURE CLASSIFICATION FOR FOREST GENETICS (THE OXFORD DECIMAL CLASSIFICATION AS USED AT THE SOUTHERN INSTITUTE OF FOREST GENETICS)

EFFECTS OF POLLINATION OR LACK OF IT
- 161.624x1 Sterility, selective fertilization, incompatibility (excluding crossability)
- 161.624x3 Xenia, metaxenia, parthenocarpy
- 161.63 Apomixis, parthenogenesis
- 163 Embryology (excluding culture)

MORPHOLOGY OF REPRODUCTIVE PARTS (excluding embryology and cytogenetics)
- 164.6/8 Morphology of reproductive parts (excluding embryology. . .)

EVOLUTION, PHYLOGENY, PALEONTOLOGY, CENTERS OF DIVERSITY
- 165.1 Evolution, phylogeny, paleontology, centers of diversity

GENETICS
- 165.3x1 Cytogenetics
- 165.3x3 Simple Mendelian inheritance, discrete characters
- 165.3x5 Linkage, gene groupings, associations, correlations, chromosome mapping
- 165.3x7 Quantitative inheritance, relationships between parent-progeny and other relatives, heritability, diallel crosses, factorial approach, components of variance, heterosis, combining ability
- 165.3x8 Breeding systems: backcrosses, recurrent selection, mass selection
- 165.3x9 Various phases of genetics: nature of genes, extranuclear inheritance

VARIATION WITHIN POPULATIONS (characteristics and inheritance within races, ecotypes, clinal variants)

INDUCED VARIATION
- 165.41x1 Hybridization, backcrossing
- 165.41x3 Inbreeding
- 165.42 Ploidy changes
- 165.43 Gene mutations (including natural ones), markers, position and arrangement effects, teratology (freaks)

NATURAL VARIATION (normal)
- 165.5x01 Natural variation (normal)

VARIATION AMONG POPULATIONS (characteristics and inheritance among races, ecotypes, clinal variants)

INDUCED VARIATION, HYBRIDIZATION
- 165.41x5 Induced variation, hybridization

NATURAL VARIATION
- 165.5x03 Natural variation

VARIATION AMONG TAXA (characteristics and inheritance among native and non-native taxa)

INDUCED VARIATION, HYBRIDIZATION, CROSSABILITY
- 165.41x7 Induced variation, hybridization, crossability

NATURAL VARIATION AMONG TAXA
- 165.5x04 Comparative data
- 165.5x06 Natural hybrids, introgression, hybrid swarms
- 165.5x08 Plant exploration and introduction

SELECTION OF VARIATIONS (identification and measurement)

NATURAL SELECTION
- 165.61 Natural selection

ARTIFICIAL SELECTION
- 165.62x1 Measurement, adjustments for site, age, competition
- 165.62x2 Juvenile-mature relations, cone-seed and seed-seedling relations, seed and seedling selection
- 165.62x3 Genotype-environment effects
- 165.62x5 Characteristics of plus and other types of trees and stands, special characters
- 165.62x6 Scoring indices, regressions on secondary factors, discriminant functions, genetic gain
- 165.62x71 Progeny, varietal, and clone testing results
- 165.62x72 Progeny, varietal, and clone testing procedures; plot technique

TREE BREEDING
- 165.9x0 History, philosophy, research programs, guidebooks, general articles
- 165.9x2 Preservation and location of breeding material: codes, signs, breeding arboreta
- 165.9x4 Pollination procedures and pollen handling

ENVIRONMENTAL FACTORS
- 111 & 113 Climatology, meteorology, situation
- 114 & 116 Geology, soils, hydrology

TAXONOMY
- 174.2 Gymnosperms
- 175 Angiosperms

SILVICAL CHARACTERS
- 181.52 Flowering, fruiting, and seedling behavior, seed years and cycles
- 181.8 Phenology

APPLICATIONS OF GENETICS IN SILVICULTURE AND MANAGEMENT OF NATURALLY REPRODUCED STANDS
- 231x0 Applications of genetics in silviculture . . .

UTILIZATION OF SELECTED VARIANTS FOR PLANTING (seed, pollen, scions, seedlings, and other propagules)
- 232.13x0 Economic importance of produce, time to produce elite material
- 232.13x2 Clones for seed orchards or outplantings
- 232.311.2 Seed production areas
- 232.311.3 Seed orchards
- 232.311x5 Prevention and detection of contamination, isolation and other measures
- 232.312 Collection, ripening, and extraction (except pollen), climbing
- 232.314 Registered seed, certification, recommendations, shipping regulations, seed collection areas
- 232.315 & 8 Storage, stratification, tests for viability (except pollen)

SPECIAL NURSERY POTTING AND TRANSPLANTING PROCEDURES USED IN FOREST TREE BREEDING WITH NATIVE AND NON-NATIVE TAXA
- 232.32x0 Special nursery potting and transplanting procedures . . .

VEGETATIVE PROPAGATION
- 232.328.1/4 Rooting by cuttings, suckers, layers
- 232.328.5 Grafting and budding

SPECIAL OUTPLANTING PROCEDURES USED IN FOREST TREE BREEDING WITH NATIVE AND NON-NATIVE TAXA
- 232.4x0 Special outplanting procedures . . .

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